REMARKS

Claims 1-21 are now pending in the application. Claims 1, 11, 15, and 21 have been amended. Minor amendments have been made to the specification to simply overcome the objections to the specification. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

SPECIFICATION

The specification stands objected to for certain informalities. More specifically, the abstract of the disclosure is objected to for exceeding the 150 word limit. Applicants have accordingly amended the abstract of the disclosure according to the Examiner's suggestions. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Applicants respectfully traverse the rejection of Claims 1-9 and 11-21 under 35 U.S.C. § 102(e) as being anticipated by Logan, III et al. (U.S. Pat. No. 6,243,857).

Referring to Claim 1, Logan, III et al. do not show, teach, or suggest a reason code module that is associated with a flowcharting module and that assigns first and second reason codes to first and second flowchart blocks to automatically detect relative frequencies at which first and second operational statuses occur during a time period.

Logan, III et al. teach a machine control system that includes a multi-block flowchart. The multi-block flowchart represents a program, and a computer compiles the program from the flowchart to control operations of a machine. (Abstract). The system also includes a debugger for displaying the flowchart in a debugger window for runtime execution control of the program. During a debugging phase, the debugger takes control over the machine control system upon an interrupt of the execution of the flowchart. (col. 4, line 1). Flowchart blocks being executed at the time of the interrupt are highlighted and/or listed to allow a user to change values of the flowchart blocks.

The machine control system does not include a reason code module that assigns reason codes to flowchart blocks, as required by the claims. The debugger identifies errors in the flowchart program during the debugging phase to allow a programmer to correct problems in the initial program. (col. 4, line 23). Furthermore, the machine control system does not automatically detect relative frequencies at which operational statuses occur during a time period, as required by the claims. For example, the machine control system taught by Logan, III et al. does not monitor a relative frequency at which a particular flowchart block is executed.

Errors that are identified in the machine control system taught by Logan, III et al. are errors that the debugger detects in the flowchart code. (col. 3, line 65). The errors are not used to automatically detect relative frequencies at which operational statuses occur during a time period. Therefore, the errors do not indicate reasons for downtime and/or cycle time in a process that is furthered by the flowchart. For example, the errors do not indicate that a particular flowchart block that is executed a significant number of times indicates proper operation or a malfunction in the process.

Applicants teach that flowchart blocks identify operational statuses (page 7, line 7). Reason codes that are assigned to the flowchart blocks are used to automatically detect relative frequencies at which the operational statuses occur during a time period. After a reason code is assigned to a flowchart block, the reason code may be executed during execution of the flowchart. The reason code is generated when the block that it is assigned to is executed. When a performance analysis module records the generation of the reason codes, the reasons for process downtime and/or cycle may be determined based on the relative rates of occurrence of particular reason codes. (page 7, line 12).

Claims 2-10 depend directly or indirectly from Claim 1 and are allowable over Logan, III et al. for the same reasons.

Referring now to Claim 11, Logan, III et al. do not show, teach, or suggest a reason code module that is associated with a flowcharting module and that assigns first and second reason codes to first and second flowchart blocks to automatically detect relative frequencies at which first and second operational statuses occur during a time period. Logan, III et al. also does not show, teach, or suggest flowchart object code that is executed by a flowchart run time engine and that generates the first reason code during execution of the first flowchart block in the flowchart object code.

As discussed above, Logan, III et al. teach a machine control system that includes a debugger in a flowchart program that is used for displaying the flowchart in a debugger window for runtime execution control of the program. During a debugging phase, the debugger takes control over the machine control system upon an interrupt of the execution of the flowchart. (col. 4, line 1). Flowchart blocks being executed at the

time of the interrupt are highlighted and/or listed to allow a user to change values of the flowchart blocks.

The machine control system does not include a reason code module that assigns reason codes to flowchart blocks, as required by the claims. The debugger identifies errors in the flowchart program during the debugging phase to allow a programmer to correct problems in the initial program. (col. 4, line 23). The machine control system also does not automatically detect relative frequencies at which operational statuses occur during a time period, as required by the claims. For example, the machine control system taught by Logan, III et al. does not monitor a relative frequency at which a particular flowchart block is executed.

Errors that are identified in the machine control system taught by Logan, III et al. are not used to automatically detect relative frequencies at which operational statuses occur during a time period. Therefore, the errors do not indicate reasons for downtime and/or cycle time in a process that is furthered by the flowchart.

Claims 12-14 depend directly or indirectly from Claim 11 and are allowable over Logan, III et al. for the same reasons.

Referring to Claim 15, Logan, III et al. does not show, teach, or suggest assigning first and second reason codes to first and second flowchart blocks in a flowchart source code to automatically detect relative frequencies at which first and second operational statuses occur during a time period.

As discussed above, Logan, III et al. teach a machine control system that includes a debugger in a flowchart program that is used for displaying the flowchart in a debugger window for runtime execution control of the program. Flowchart blocks being

executed at the time of an interrupt are highlighted and/or listed to allow a user to change values of the flowchart blocks. The debugger does assign reason codes to flowchart blocks, as required by the claims. Furthermore, errors that are identified in the machine control system taught by Logan, III et al. are not used to automatically detect relative frequencies at which operational statuses occur during a time period. Therefore, the errors do not indicate reasons for downtime and/or cycle time in a process that is furthered by the flowchart.

Claims 16-21 depend directly or indirectly from Claim 15 and are allowable over Logan, III et al. for the same reasons.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: 7/2/04

By: _____
Michael D. Wiggins
Reg. No. 34,754

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

MDW/wmt